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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

EDWARDS JR, TIMOTHY

ART UNIT

PAPER NUMBER

2612

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11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,903	Applicant(s) SAHASHI ET AL.	
	Examiner Timothy Edwards, Jr.	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed August 11, 2008 have been fully considered but they are not persuasive. Applicant's argument is based on the added language to the independent claims. Therefore, Examiner maintains office action dated November 12, 2008.

Applicant's amendment necessitates new ground of rejection(s) of rejections presented in this office action. Therefore, this action is made final.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 16-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghabra et al '985, and further in view of Yokohama Rubber Company ("Yasushi") (both references previously cited).

Considering (amended) claim 1, Ghabra discloses a wireless sensor system comprising, **a**) a plurality of sensors to detect respective parameters (see col 5, lines 11-13 and fig 1, items 16; **b**) a sensor signal to transmit wireless sensor signals (see col 5, lines 26-31 and fig 1, item 20); **c**) an electric power receiver to receive wirelessly an

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electric operating power required to drive the sensors and the signal transmitter (see col 2, lines 43-61 and abstract); **d**) a sensor receiver for receiving signal from the sensors (see col 5, lines 38-41); **e**) an electric power transmitter to transmit the electric operating power wirelessly (see col 3, lines 9-19); **f**) only one sensor signal receiver is provided to commonly receiving the sensor signal from the plural sensors (see fig 1, item 26); **1**) except Ghabra does not specifically recite the electric power receiver supplies operating power directly to sensors and sensor's signal transmitter. Ghabra teaches sending an electromagnetic power signal to a tire sensing unit. The power signal is used to recharge a battery, which supplies power to the tire sensing unit. One of ordinary skill in the art readily recognizes the electromagnetic power signal is used indirectly to power the tire sensing unit of Ghabra via an energy storage device. Yasushi teaches, in the environment of tire monitoring on a vehicle, an electric power receiver supplies operating power directly to sensors and sensor's signal transmitter (see SOLUTION lines 5-10 and paragraph 0006). Therefore, it would have been obvious to one of ordinary skill in the art to modify the electromagnetic power signal processing circuit in the Ghabra system to allow the electromagnetic power signal to directly power the sensing device as taught by Yasushi because both systems are concern with supplying an electromagnetic power signal to a tire sensing unit via a receiver unit.

Considering claim 2, Ghabra discloses the limitation of this claim (see col 5, lines 26-28 and lines 51-53).

Considering claims 3-5 Ghabra discloses the limitations of these claims (see col 5, lines 26-37).

Considering claim 6, Ghabra does not specifically recite his sensors mounted on the bearings in a machine part. However, Ghabra discloses the monitoring of pressure and temperature associated with the rotation of an object and its speed (see col 5, lines 20-25). One of ordinary skill in the art would readily recognize the temperature parameter monitored by Ghabra could be the same temperature parameters which would be

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monitored in a machine bearings or bearing associated with a wheel of a vehicle. Therefore, it would have been obvious to one of ordinary skill in the art the Ghabra system would function in a bearing monitoring environment.

Considering claim 7, Ghabra discloses the limitation of this claim (see fig 1).

Considering claims 16-18, 28-31 the limitations of these claims are interpreted and rejected as stated in claims 1 and 6.

Considering claims 19-21, Ghabra does not specifically recite a rotational sensor including a multi-polar magnet. Ghabra discloses the use of a plurality of sensing devices associated with rotation of a component (see col 5, lines 26-37). One of ordinary skill in the art would readily recognize the use of any type of rotational sensor is within the scope of the Ghabra system because Ghabra is concern with the sensing of rotational devices and Ghabra discloses the use of a plurality of sensing devices associated with rotation of an assembly. Applicant admits (page 2, 2nd paragraph) the use of multi-polar device to detect rotation of a device is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art to use a known rotational detect device on the rotational device in the Ghabra system because Ghabra is concern with the use of a plurality of sensing devices associated with equipment comprising bearing assembly.

Considering claims 22-24, Ghabra does not specifically recite a magnetic sensor is a magneto resistive sensor. Obviousness is as stated in claims 19-21.

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Considering claims 25-27, Ghabra does not specifically recite the location of his sensor relevant to bearing of the device. Arranging the devices such that they would not be susceptible to dirt and icing suggest sealing the devices in a sealed compartment or container. One of ordinary skill in the art readily recognizes the sensor must be placed near or within an area such that the device would be able to sense the parameter of interest. The sensor should be placed in an environment free of hazardous contaminants to obtain accurate measurements unobstructed. Therefore, it would have been obvious to one of ordinary skill in the art this limitation is within the scope of the Ghabra system because Ghabra discloses sensors located on a vehicle wheel and a transmitter for transmitting signals with respect to the rotation of the wheel.

4. Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokohama Rubber Company ("Yasushi") '710 (previously cited), and further in view of Ghabra US 6,838,985.

Considering (amended) claim 8, Yokohama discloses a) a plurality of wireless sensor units (see fig 3, item 10); **a**) the sensor unit includes an electric power receiver having a tuning circuit and a detecting and rectifying circuit to secure an electric operation power from an electromagnetic wave of a predetermined power feeding frequency (see paragraph 0006); **b**) a sensor signal receiving unit to supply wirelessly the electric operating power to each of the wireless sensor units, the sensor receiving unit including an electric power transmitter to transmit wirelessly an electromagnetic wave of the predetermined power feeding frequency and the sensor signal receiver receives the wireless sensor signal of the natural frequency that is transmitted from each sensor unit (see paragraph 0007); **c**) only one sensor signal receiver is provided to receive the

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sensor signals (see fig 1, item 20); 1) except Yasushi does not specifically recite at least one sensor unit provided with a plurality of sensors and a signal coordinator to process respective output from the sensor so that the sensor signals are discriminately received by the sensor signal receiving unit. Ghabra teaches the use of a plurality of sensors in a tire monitoring unit and the transmission of each of these sensors data to the vehicle display for viewing by the occupant (see col 5, lines 20-60). Therefore, it would have been obvious to one of ordinary skill in the art to modify the sensors of the Yasushi system to include a sensor unit provided with a plurality of sensors and a signal coordinator to process respective output from a plurality of sensors as taught by Ghabra because Yasushi and Ghabra are concern with the transmission of tire parameters to a vehicle occupant and the more tire parameters that are sensed the safety the vehicle occupants would be.

Considering claim 9, Yokohama discloses the limitation of this claim (see paragraph 0024).

Considering claim 10, the limitations of this claim are interpreted and rejected as stated in claim 8. Yokohama disclose 1) sensor receiver unit include a plurality of tuning circuit to receive a signal of a single frequency corresponding to the assigned natural frequency of the wireless sensor signal (see paragraph 0032 and fig 4); 2) a switching detector for switching among the tuning circuit (see paragraph 0062 and fig 4, item 21).

Considering claim 11, the limitations of this claim are interpreted and rejected as stated in claim 10.

Considering claims 12, 13 Yokohama disclose the limitations of these claims (see paragraphs 0032-0035).

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Considering claim 14, Yokohama does not specifically recite his sensors mounted on the bearings in a machine part. However, Yokohama discloses the monitoring of pressure and temperature associated with the rotation of an object (see paragraph 0014). One of ordinary skill in the art would readily recognize the parameters which are monitored by Yokohama are same parameters which would be monitored in a machine bearing part or bearing associated with a wheel of a vehicle. Therefore, it would have been obvious to one of ordinary skill in the art the Yokohama system would function in a bearing monitoring environment.

Considering claim 15, Yokohama discloses the limitation of this claim (see paragraph 0014).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Factanini US 2004/0150516 teaches the use of magnetic sensors, monitoring the bearings of a vehicle wheel and identifying and differentiating the signals for a plurality of vehicular sensors.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If the claimed invention is amended, Applicant is respectfully requested to indicate the portion(s) of the specification, which dictate(s) the structure/description relied upon to assist the Examiner in proper interpretation of the amended language and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication should be directed to Examiner Timothy Edwards, Jr. at telephone number (571) 272-3067. The examiner can normally be reached on Monday-Thursday, 8:00 a.m.-6:00 p.m. The examiner cannot be reached on Fridays.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman, can be reached at (571) 272-3059.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-4700, Mon-Fri., 8:30 a.m.-5:00 p.m.

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Any response to this action should be fax to:

(571) 273-8300 (for formal communications intended for entry).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> or contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Timothy Edwards, Jr./
Primary Examiner, Art Unit 2612
November 19, 2008